West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Draft/ Proposed Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03300015-2014**
Application Received: **July 12, 2013**
Plant Identification Number: **03300015**
Permittee: **Monongahela Power Company**
Facility Name: **Harrison Power Station**
Mailing Address: **800 Cabin Hill Drive, Greensburg, PA 15601**

Physical Location:	Haywood, Harrison County, West Virginia
UTM Coordinates:	557.392 km Easting • 4,359.489 km Northing • Zone 17
Directions:	From the junction of State Route 20 and US Route 19 near Haywood, take Route 20 approximately one mile west to the facility.

Facility Description

The Harrison Power Station is a fossil fuel fired electric generation facility with one 662 MW (U1) and two 661MW (U2 & U3) units and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of three (3) 6325 mmBtu/hr coal-fired boilers, two (2) 202 mmBtu/hr natural gas auxiliary boilers, two (2) 1000 KW and one (1) 350 KW diesel-fired emergency generators, one (1) 108.2 KW propane fired emergency generator, boiler related lime handling and sludge system, a Rapid Discharge Rail Unloading system and various supporting operations such as coal handling, ash handling and various tanks with insignificant emissions. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day and fifty-two (52) weeks per year.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2012 Actual Emissions
Carbon Monoxide (CO)	1,885.40	1,022
Nitrogen Oxides (NO_X)	42,068.10	15,610
Particulate Matter ($PM_{2.5}$)	2778	497
Particulate Matter (PM_{10})	4167	757
Total Particulate Matter (TSP)	7,510	1,233
Sulfur Dioxide (SO_2)	426,609	12,049
Volatile Organic Compounds (VOC)	249.10	123

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2012 Actual Emissions
Antimony	0.03	0.011
Arsenic	0.56	0.163
Beryllium	0.03	0.007
Cadmium	0.09	0.026
Chromium	0.82	0.257
Cobalt	0.21	0.070
Manganese	0.92	0.320
Mercury	0.23	0.086
Nickel	0.97	0.267
Selenium	2.37	1.372
Hydrochloric Acid (HCl)	88.3	46.41
Hydrogen Fluoride (HF)	30.3	17.57
Polycyclic Aromatic Compounds	0.22	0.104
Acetaldehyde	1.97	1.165
Acrolein	1.00	0.593
Benzene	4.51	2.656
Benzyl Chloride	2.42	1.430
Cyanide Compounds	8.66	5.108
Formaldehyde	14.12	0.490

Hazardous Air Pollutants	Potential Emissions	2012 Actual Emissions
Isophorone	2.01	1.185
Methyl Bromide	0.55	Not reported
Methyl Chloride	1.84	1.083
Methyl Ethyl Ketone	1.35	0.797
Methyl Hydrazine	0.59	Not reported
Methylene Chloride	1.00	0.593
Propionadlehyde	1.32	0.776
Toluene	0.83	0.490
Some of the above HAPs may be counted as PM or VOCs.		

This facility has the potential to emit equal to or greater than 100,000 tons per year of carbon dioxide equivalent (CO_2e) and 100 tons per year of greenhouse gases (GHGs) on a mass basis.

Title V Program Applicability Basis

This facility has the potential to emit 426,609 tons per year of SO_2, 42,068.10 tons per year of NO_X, 4,167 tons per year PM_{10}, 1,885.40 tons per year CO, 249.10 tons per year of VOC, over 88 tons per year of Hydrochloric Acid, over 30 tons per year of Hydrogen Fluoride and over 167.22 tons per year of total HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, 10 tons per year of an individual HAP, and over 25 tons per year of total HAPs, Harrison Power Station is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:

45CSR2	Control of Particulate matter emissions from indirect heat exchangers
45CSR6	Open burning prohibited.
45CSR7	Control of Particulate from Manufacturing Source Operations
45CSR10	Control of sulfur dioxide emissions from in direct heat exchangers
45CSR11	Standby plans for emergency episodes.
45CSR13	Permit for construction, modification
45CSR16	Standard of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
45CSR30	Operating permit requirement.
45CSR33	Acid Rain Provisions and Permits

	45CSR34	Emission Standards for Hazardous Air Pollutants
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 64	Compliance Assurance Monitoring
	40 CFR Part 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
	40 CFR Part 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units
	40 C.F.R. Part 60, Subpart JJJJ	Standards Of Performance for Stationary Spark Ignition Internal Combustion Engines
	40 CFR 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
	40 C.F.R. Part 72	Permits Regulation
	40 C.F.R. 74	Sulfur dioxide Opt-ins
	40 C.F.R. 75	Continuous Emissions Monitoring
	40 C.F.R. 76	Nitrogen Oxides Reduction Program
	40 C.F.R. 77	Excess Emissions
	40 C.F.R. Part 60, Subpart Y	Coal Preparation Plants
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR39	NOx Annual Trading Program
	45CSR40	NO_x Ozone Season Trading Program
	45CSR41	SO_2 Trading Program

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-1477B	6/3/2003	
R33-3944-2017-4	12/19/12	
G60-C049	11/28/12	
R13-2988	11/9/12	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

❖ The following are the result of changes to the applicable rules and regulations in this Title V second Renewal:

- **45CSR26 - *NO_X Budget Trading Program as A Means of Control and Reduction of Nitrogen Oxides from Electric Generating Units***
  Condition 3.1.11 was removed since 45CSR26, NOx Budget Trading Program, was repealed on June 1, 2009. This also led to the removal of Appendix A: Harrison Power Station NOx Budget Permit Application.

- **45CSR37 - *Mercury Budget Trading Program To Reduce Mercury Emissions***
  Condition 3.1.12 was removed since 45CSR37, Mercury Budget Trading Program, was repealed on June 1, 2009. This also led to the removal of Appendix D: Harrison Power Station CAMR Compliance Order.

- Since Acid Rain Permits are no longer being placed in the appendices of Title V permits, Appendix C: Harrison Power Station Acid Rain Permit was removed. This led to the removal of the Appendix C reference in 4.1.14. and 4.1.18 that stated the Acid Rain Permit was in Appendix C.

- Due to the removal of the Acid Rain Permit, the NOx Budget Permit Application, and CAMR Compliance Order in the appendices, the remaining appendices were renamed. This resulted in the references to the appendices in the following conditions to be changed: 4.1.7, 4.2.1, 4.4.2, and 4.5.2.

- **40 CFR 63, Subpart UUUUU - *National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU)***
  The boilers (B1, B2, and B3) are subject to the requirements of Subpart UUUUU which establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from coal- and oil-fired EGUs. The placeholder language has been added to this permit as condition 4.1.19 for the Electric Utility Steam Generating Units (EGU) MACT, 40 C.F.R. 63, Subpart UUUUU. The existing source compliance date is April 16, 2015 for the EGU MACT, but the Harrison Power Plant was granted a one-year compliance extension and has until April 16, 2016.

- **40 CFR 63, Subpart DDDDD - *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters***
  The "*Boiler1A" and "Aux Blr PB*" are subject to the requirements of 40 CFR 63 Subpart DDDDD. The placeholder language has been added to this permit as condition 4.1.20 for the Industrial, Commercial, and Institutional Boilers and Process Heaters MACT, 40 C.F.R. 63, Subpart DDDDD. The existing source compliance date is January 31, 2016 for the Boiler MACT.

- **40CFR Part60, Subpart Y-** Due to changes to the regulation on October 8, 2009, 40CFR Part60, Subpart Y citations have been updated in section 6 of this permit. Initial compliance testing has already been conducted, so condition 6.3.1 was deleted.

- **40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines***

  The emergency generator engines (*EDG1 and EDG2*) are existing stationary compression ignition (CI) RICE greater than 500 HP located at a major source of HAP emissions and are therefore subject to Subpart ZZZZ. These requirements have been included in section 7 of this permit.

  The emergency generator engine (*EDG3)* is an existing stationary compression ignition (CI) RICE less than 500 HP located at a major source of HAP emissions and therefore subject to Subpart ZZZZ. These requirements have been included in section 7 of this permit.

The new emergency generator engine (EG-1) has a site rating of less than or equal to 500HP located at a major source of HAP and according to 40CFR§63.6590(c)(6) must meet the requirements of 40CFR63 subpart ZZZZ by meeting the requirements of 40CFR60 subpart JJJJ.

- **40 CFR Part 64 –** This is a 2nd renewal. Since CAM was addressed in the first renewal and there were no modifications to the facility that would have triggered a CAM review subsequent to the first renewal, a CAM evaluation was not made.

    - Added CAM requirements 40 C.F.R. §§64.7(b), (c), (d), (e) and §64.8 as conditions 4.2.6 – 4.2.10.
    - Added CAM General Reporting Requirements 40 C.F.R. §64.9(a) as condition 4.5.4.
    - Added CAM General Recordkeeping Requirement 40 C.F.R. §64.9(b) as condition 4.4.4.

- Since the frequency of retesting is dependent upon the test results of the previous testing and since it is possible that more than one series of tests may be required during the permit term (e.g. tests are required annually, once /2 years or once /3 years), the language in Condition 4.3.1 has been revised to exclude the dates of the last tests. Instead, the testing schedule and next test dates are included here in the fact sheet.
  Next PM test dates are as follows: Unit B1 (Cycle 2- once /2 years) scheduled for 6/4/14; Unit B2 (Cycle 3- once /3 years) due by 5/9/15; Unit B3 (Cycle 3- once /3 years) due by 8/16/14.

- **45CSR2 and 45CSR10 Monitoring Plan –** A revised 45CSR2 and 45CSR10 monitoring plan for the boilers was submitted to the Director. The revised plan incorporates the CAM Plan monitoring of precipitator power levels as the method of monitoring. This would replace the daily parametric monitoring calculation previously in place. The revised plan was approved by the WVDAQ on April 3, 2014 and incorporated into the permit as Appendix A.

- The CAM related testing and CAM plan Implementation requirements of condition 4.2.6. of permit R30-03300015-2009 have been fulfilled thereby rendering this condition obsolete. Therefore it has not been included in this renewal permit.

- Condition 5.2.3 has been added to include monitoring requirements for visible emissions. Records of the visible emission observations were required in condition 5.4.1, but monitoring requirements were excluded in the previous Title V permit.

- The company has installed Low NOx Burners (LNB) and they have been added in the Emission Unit Table. Also, the design capacities for EDG1 and EDG2 were corrected from 800 kW to 1000 kW.

- Per the company's request, the restriction of the consent order (previously condition 4.1.13) which allowed the facility to burn unwashed coal with a maximum ash content of 8.5% when the scrubber was not operating has been removed from this permit. According to DAQ inspector's and company's explanation, it is not physically possible to run a unit without the scrubbers. There is no way to bypass them, so all flue gas must exit via the absorber modules and new stack. The flue gas temperature would destroy the absorber module if the recycle pumps were not in service spraying lime slurry. Therefore, since it is not physically possible to run Unit B1, Unit B2 and Unit B3 without a flue gas desulfurization system (scrubber), new condition 4.1.13 has been added to this permit which states this new restriction.

❖ The Title V permit includes the following changes (from G60-C049) in this permit:
A new 108.2-kW Kohler Model 100REZGD Lean Burn Four Stroke generator (EG-1) set with two (2) separate 1000 gallon propane fuel tanks (T01 and T02) were added in the Emission Unit Table. The generator will be used to supply power during an emergency. It will be operated a maximum of 500 hr/yr. The generator set is powered/fueled by propane. The tanks are pressurized tanks and should not have any emissions. Requirements for these units have been added in section 7 of this permit.

The changes in potential emissions associated with G60-C049 are as follows:

Pollutants	Change in Potential Emissions, TPY
Nitrogen Oxides (NOx)	0.10
Carbon Monoxide (CO)	0.40
Volatile Organic Compounds (VOC)	0.10

- The new generator engine is a Stationary Spark Ignition Internal Combustion Engine and therefore is subject to Section 8 (40 CFR 60, Subpart JJJJ entitled "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines") of the Class II General Permit C60.

- The generator engine is a Reciprocating Internal Combustion Engine (R.I.C.E.) and therefore is subject to Section 5 of the Class II General Permit C60-C.

- Incorporation of Applicable Requirements into the Title V Permit
  The registration provides specific hourly and annual mass rate emission limits for NO_x, CO and VOC which are incorporated into the permit. MRR required to demonstrate compliance with these limits are also written in the renewal Title V permit. The requirements are incorporated into the renewal operating permit as follows:

  - The emission limits from the registration are included in the permit as condition 7.1.7.

  - The applicable sections 5 and 8 of G60-C are IBR in the permit as condition 7.1.8.

  - Other associated G60-C monitoring, testing, recordkeeping, and reporting requirements in G60-C are IBR in conditions 7.2.2., 7.3.1., 7.4.2., and 7.5.5., respectively.

❖ The Title V permit includes the following changes (from R13-2988) in this permit:

Following Emission Units were added in the Emission Unit Table and the requirements for these units have been added in section 8 of this permit.

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
RDRU	EP-1	Rapid Discharge Rail Unloader to Belt Feeder	To be installed	3,000 TPH	Chemical Fogging System (CFS)
BF-01	EP-2	Unloading Belt Feeder	To be installed	3,000 TPH	Enclosure/CFS
CV-01	EP-3	Load -out Conveyor	To be installed	3,000 TPH	Enclosure/CFS
CV-02	EP-4	Conveyor	To be installed	3,000 TPH	Enclosure/CFS
CV-03	EP-5	Conveyor to Transfer Tower	To be installed	3,000 TPH	Enclosure/CFS
CV-04	EP-6	Conveyor to Stacking Tubes	To be installed	3,000 TPH	Enclosure/CFS
ST-003	EP-7	Stacking Tube/Coal Pile	To be installed	3,000 TPH	None

This Rapid Discharge Rail Unloader (RDRU) system has not yet been installed and is not currently in operation. Although no definitive date has been set, the project may still be initiated and the company plans on submitting a request for permit extension prior to the 18-month expiration date.

The Proposed emissions associated with R13-2988 are as follows:

Pollutants	Proposed Emissions, TPY
PM	10.39
PM_{10}	3.42
$PM_{2.5}$	0.46

- **40CFR Part60, Subpart Y** –The four (4) belt conveyors, and one (1) stockpile will be subject to 40 CFR 60 Subpart Y. Requirements for 40 CFR 60 Subpart Y have been added in section 8 of this permit.

- In condition 8.1.4, the "facility" throughput was limited to 500,000 tons per year, whereas the emission calculations in the permit application for R13-2988 and R13-2988 emission limits were based on 5,000,000 tons per year. The R13-2988 evaluation also describes this source as having a throughput of 5,000,000 tons per year. This appears to be a typo that was missed when the permit (R13-2988) was issued and has been corrected in the Title V permit.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

45CSR27: *To prevent and control the emissions of Toxic Air Pollutants.* Although this facility has emissions of Toxic Air Pollutants in excess of the thresholds listed in 45CSR27 Table A, it does not meet the definition of a Chemical Processing Unit. There is not an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use toxic air pollutants. Therefore the facility is not subject to the requirements of Rule 27.

40 C.F.R. 60, Subpart K & Ka: All tanks are below 40,000 gallons in capacity.

40 C.F.R. 60, Subpart Kb: All new tanks constructed after July 23, 1984 are less than the capacity threshold of 19,813 gallons and/or have a vapor pressure less than 2.2 psi.

40 C.F.R. 60, Subpart D: Harrison Power Station boilers (B1, B2, & B3) were constructed prior to August 17, 1971.

40 C.F.R. 60, Subpart Da: Harrison Power Station boilers (B1, B2, & B3) were constructed before September 18, 1978.

40 C.F.R. 60, Subpart Db: Harrison Power Station Auxiliary boilers (A, B) were constructed prior to June 19, 1984.

40 C.F.R. 60, Subpart OOO: The definition of limestone states that it is a sedimentary rock consisting of at least 80% calcium or magnesium carbonates. Lime is defined as calcium oxide, which can be produced by subjecting calcium carbonate to high temperature baking in kilns to drive off

carbon dioxide. Therefore, lime is not equivalent to limestone and the Harrison lime handling operation is not subject to Subpart OOO.

40 C.F.R. 63, Subpart Q: The existing Cooling Towers do not use any chromium based water treatment chemicals and therefore, are exempt from the referenced regulation.

45CSR5: The Rule to Prevent and Control Air Pollution from the Operation of Coal Preparation Plants, Coal Handling Operations, and Coal Disposal Areas is not applicable to the facility since 45CSR2 applies.

45CSR17: The Rule to Prevent and Control Particulate Matter Air Pollution from Material Handling Preparation, Storage, and Other Sources of Fugitive Particulate Matter is not applicable to the facility because
45CSR2 is applicable

Request for Variances or Alternatives

None

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: May 23, 2014
Ending Date: June 23, 2014

Point of Contact

All written comments should be addressed to the following individual and office:
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Division of Air Quality
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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

N/A